

U.S. PATENT OFFICE

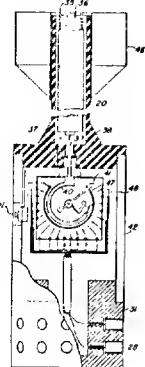
OFFICIAL GAZETTE, U. S. Patent Office

SEPTEMBER 15, 1964

## GENERAL AND MECHANICAL.

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housing as it sinks into the ocean, the said various contacts being so spaced and arranged as to be closed at predetermined fixed intervals of depth, each contact of the said switch thereby being closed at some predetermined minor interval of depth and certain periodically spaced contacts being closed at predetermined major intervals of depth; a first series of electrically detonated explosive charges mounted within the said housing and ventable to the surrounding water, one charge of the said first series of explosive charges being connected to each of the said contacts of the said multi-contact switch, the said first series of explosive charges having a substantially instantaneous detonating characteristic when activated by electrical current; a second series of electrically detonated explosive charges mounted within the said housing and ventable to the surrounding water, one

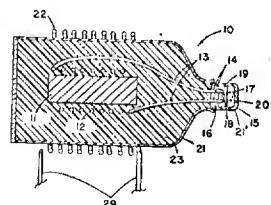


charge of the said second series of explosive charges being connected to each of the said periodically spaced contacts which are closed at predetermined major intervals of depth, the said second series of explosive charges having a delayed detonation characteristic when activated by electrical current; a battery connected to the wiper arm of the said multi-contact pressure driven switch, one charge of the said first series of explosive charges being thereby detonated at each minor and major interval of depth and one charge of the said second series of explosive charges being thereby detonated at each major interval of depth as the said housing sinks in the ocean, the relative amplitudes of the resulting series of pulses being determinable, and the major depth intervals being recognizable by a double pulse, when received at some point in the ocean substantially remote from the said vertically sinking housing.

**3,148,619**  
**HIGH FREQUENCY IMMUNE SQUIB**

**Dale G. Holinbeek, Madison, Wis., assignor to Bjorksten Research Laboratories for Industry, Inc., Fitchburg, Wis., a corporation of Wisconsin**

**a corporation of Wisconsin**  
**Filed June 16, 1961, Ser. No. 117,581**  
**18 Claims. (Cl. 102-28)**



1. Means to initiate a rapid self-sustaining chemical reaction comprising, in combination with a member

which is heated by passing electric current through the member and reactant substances adjacent said member; a secondary winding having its ends electrically connected respectively by conductive means to the ends of said member, a primary winding inductively coupled to said secondary winding, means to connect the ends of said primary winding to a source to provide at least one pulse of electrical current in said primary winding to provide a field of changing magnetic flux which links said secondary winding, a single core of magnetically soft metal, said core providing a core for said secondary winding and also for said primary winding, said core extending through both of said windings, said core being of substantially constant cross-sectional area and shape throughout the portion of its length which extends through said windings, said core being unshunted around said primary winding, first supporting means, said secondary winding wound on said supporting means, second supporting means rigidly and securely attached, as by potting, to said first supporting means, said primary winding wound on said second supporting means, characterized by an electromagnetic shield interposed between said primary and secondary windings, said shield entirely electrically enclosing the secondary winding, the member, at least the entirety of one electrical conductor extending from said secondary winding to said member, and said reactant substances, said shield devoid of electrical conductors extending therethrough, said shield constituting a shorted turn, said shield essentially devoid of electrical apertures therein.

3.148.620

#### **WEAR REDUCTION ADDITIVES**

**David E. Jacobson, Stockholm, and Stig Y. Ek, Vallingsby,  
Sweden, assignors, by mesne assignments, to Wegematie  
Corporation, New York, N.Y., a corporation of  
Delaware**

Filed May 29, 1961, Ser. No. 126,747  
Claims priority, application Sweden Aug. 14, 1959  
31 Claims. (Cl. 102—38)



1. A cartridge having a propellant charge, a single projectile, and an additive for reducing gun barrel wear upon firing of said cartridge, said additive comprising:
  - (a) a layer of carrier material disposed around said propellant charge and comprised of paraffin having a melting point between 50 and 100° C. and adapted to produce relatively cool gas upon firing of said charge; and
  - (b) finely divided particles of titanium dioxide contained in said layer of paraffin in an amount sufficient to produce a temperature resistant barrel protector upon firing of said charge,